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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/761,391	01/22/2004	Masayuki Hirose	040256-0130	2409

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EXAMINER	
NORRIS, JEREMY C	
ART UNIT	PAPER NUMBER
2841	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/20/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/761,391	HIROSE, MASAYUKI	
	Examiner	Art Unit	
	Jeremy C. Norris	2841	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 December 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 5, 7, 9, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by US 3,686,422 (Doose).

Doose discloses, referring primarily to figure 2, a superconducting cable comprising: a cable core (8) having a superconducting conductor; a thermal insulation pipe (11) accommodating the cable core, a forward path (7) of a coolant channel being formed by the thermal insulation pipe; and a coolant return pipe (10) disposed beside the cable core in the thermal insulation pipe and functioning as a backward path (9) of the coolant channel [claim 1], wherein a coolant inlet for supplying a coolant into the thermal insulation pipe is disposed at one end of the thermal insulation pipe; near the coolant inlet, one end of the coolant return pipe opens to the outside of the thermal insulation pipe; and at other end of the thermal insulation pipe, the other end of coolant return pipe communicates to the inside of the thermal insulation pipe (col. 4, lines 45-68) [claim 3], wherein a coolant inlet for supplying a coolant to the coolant channel is disposed at one end of the thermal insulation pipe, and a coolant outlet for taking out the coolant from inside the thermal insulation pipe is disposed at the other end of the thermal insulation pipe; and wherein near the coolant inlet, one end of the coolant return

pipe opens to the outside of the thermal insulation pipe, and at the other end of the thermal insulation pipe, the other end of the coolant return pipe opens to the outside of the thermal insulation pipe such that the coolant outlet and the other end of the coolant return pipe are connected to communicate with each other [claim 5].

Similarly, Doose discloses, a superconducting cable comprising: a cable core (8) having a superconducting conductor; a thermal insulation pipe (11) accommodating the cable core, a forward path (7) of a coolant channel being formed in the thermal insulation pipe outside of the cable core; and a coolant return pipe (10) disposed beside the cable core in the thermal insulation pipe and functioning as a backward path (9) of the coolant channel [claim 7], wherein a coolant inlet for supplying a coolant into the thermal insulation pipe is disposed at one end of the thermal insulation pipe; near the coolant inlet, one end of the coolant return pipe opens to the outside of the thermal insulation pipe; and at other end of the thermal insulation pipe, the other end of coolant return pipe communicates to the inside of the thermal insulation pipe (figure 4, lines 45-65) [claim 9], wherein a coolant inlet for supplying a coolant to the coolant channel is disposed at one end of the thermal insulation pipe, and a coolant outlet for taking out the coolant from inside the thermal insulation pipe is disposed at the other end of the thermal insulation pipe; and wherein near the coolant inlet, one end of the coolant return pipe opens to the outside of the thermal insulation pipe, and at the other end of the thermal insulation pipe, the other end of the coolant return pipe opens to the outside of the thermal insulation pipe such that the coolant outlet and the other end of the coolant

return pipe are connected to communicate with each other (col. 4, lines 45-65)[claim 11].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 2, 4, 6, 8, 10, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 3,686,422 (Doose) in view of US 4,303,105 (Rohner).

Doose discloses the claimed invention as described above with respect to claim 1, except Doose does not specifically disclose that the coolant return pipe is a corrugated metal pipe [claim 2]. However, it is well known in the art to use corrugated metal pipe in superconducting cable applications as evidenced by Rohner (col. 1, lines 60-65). Therefore it would have been obvious to the ordinarily skilled artisan at the time of invention to use a corrugated metal pipe as the coolent return pipe in the invention of Doose as is known in the art and evidenced by Rohner. The motivation for doing so

would have been to assure flexibility of the cable. Additionally, the modified invention of Doose teaches, wherein a coolant inlet for supplying a coolant into the thermal insulation pipe is disposed at one end of the thermal insulation pipe; near the coolant inlet, one end of the coolant return pipe opens to the outside of the thermal insulation pipe; and at other end of the thermal insulation pipe, the other end of coolant return pipe communicates to the inside of the thermal insulation pipe (col. 4, 45-68) [claim 4], wherein a coolant inlet for supplying a coolant to the coolant channel is disposed at one end of the thermal insulation pipe, and a coolant outlet for taking out the coolant from inside the thermal insulation pipe is disposed at the other end of the thermal insulation pipe; and wherein near the coolant inlet, one end of the coolant return pipe opens to the outside of the thermal insulation pipe, and at the other end of the thermal insulation pipe, the other end of the coolant return pipe opens to the outside of the thermal insulation pipe such that the coolant outlet and the other end of the coolant return pipe are connected to communicate with each other (col. 4, lines 45-68) [claim 6].

Similarly, Doose discloses the claimed invention as described above with respect to claim 7, except Doose does not specifically disclose that the coolant return pipe is a corrugated metal pipe [claim 8]. However, it is well known in the art to use corrugated metal pipe in superconducting cable applications as evidenced by Rohner (col. 1, lines 60-65). Therefore it would have been obvious to the ordinarily skilled artisan at the time of invention to use a corrugated metal pipe as the coolent return pipe in the invention of Doose as is known in the art and evidenced by Rohner. The motivation for doing so

would have been to assure flexibility of the cable. Additionally, the modified invention of Doose teaches, wherein a coolant inlet for supplying a coolant into the thermal insulation pipe is disposed at one end of the thermal insulation pipe; near the coolant inlet, one end of the coolant return pipe opens to the outside of the thermal insulation pipe; and at other end of the thermal insulation pipe, the other end of coolant return pipe communicates to the inside of the thermal insulation pipe (col. 4, lines 45-68) [claim 10], wherein a coolant inlet for supplying a coolant to the coolant channel is disposed at one end of the thermal insulation pipe, and a coolant outlet for taking out the coolant from inside the thermal insulation pipe is disposed at the other end of the thermal insulation pipe; and wherein near the coolant inlet, one end of the coolant return pipe opens to the outside of the thermal insulation pipe, and at the other end of the thermal insulation pipe, the other end of the coolant return pipe opens to the outside of the thermal insulation pipe such that the coolant outlet and the other end of the coolant return pipe are connected to communicate with each other (col. 4, lines 45-68) [claim 12].

Response to Arguments

Applicant's arguments with respect to claims 1-12 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy C. Norris whose telephone number is 571-272-1932. The examiner can normally be reached on Monday - Friday, 9:30 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on 571-272-1984. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jeremy C. Norris
Patent Examiner - Technology Center 2800
Art Unit 2841

JCSN